Department for Energy Security & Net Zero

Cabinet Office

Government Property Function

CATAPULT Energy Systems

Developing and delivering your strategy: Understanding your timelines and risks

Public Sector Decarbonisation Guidance

Contents

Disclaimer:

1. Why plan activities over a timeline

Without a delivery plan for your decarbonisation programme, securing resource and funding at the right time to make your projects happen will be challenging.

Understanding realistic timescales for individual activities and being able to combine them into a plan enables you to:

- Identify and plan out deliverables.
- Identify and secure the required resources for your deliverables.
- Identify, map and monitor your dependencies and critical path.
- Undertake financial planning and proposed spend management against deliverables.
- Ensure deliverables are complete at the right point.

When considering your plan, it is worth taking into account two main elements:

- Overall strategy delivery – how you are going to approach, monitor, report on and deliver decarbonisation at a summary level (e.g. at your estate or portfolio level).
- Project / programme delivery – how you are going to approach, monitor, report on and deliver decarbonisation at a specific project or deliverable level (e.g. at building / intervention / task level).

An effective plan provides a tool that your team and partners can use to identify, consider, agree, and manage activities required to deliver desired outcomes, as well as providing a conduit from your specific project to your wider strategy to ensure everything is joined up.

Depending on the complexity of your strategy or individual projects, you will want to consider if having dedicated specialist project managers is a good use of resource.

Planning can be approached by asking a series of questions:

What tasks are required?	Tasks should be broken down to help meet overall goals and this should help identify your deliverables.
How long will the tasks take and by when do they need to be done?	Setting out a schedule of effort required, against the tasks required, with reasonable duration to understand if/how they can be delivered by a set date, understand what can be done in parallel, and/or understand when a project could be completed. This will require oversight of end-of-life assets to make sure new low carbon assets are installed and operational in time to replace them. You might need to consider 'operational factors' such as when buildings are closed or less busy, or if it's better to do certain types of projects at a particular time of the year. For example, heating projects in the summer.
Who is going to do them?	For each task, mapping the skills required, and which individuals and organisations will be involved in each activity.
What resources are required?	Understanding what other resources will be necessary for the task, for example a specific additional skill set or if any specific equipment is needed.
What is it going to cost?	What funding is required and when?
How will you know if it is working?	How can you check progress against tasks and timelines to make sure things are on track and delivering benefits?
What could go wrong?	Identify potential risks and the approach to deal with them, including escalation routes.

The approach to planning in this guide focusses on considering logically what major tasks are likely to need to be carried out and then breaking them out into activities required to complete the task. This is considered a top-down approach.

There are also alternative forms of planning that can be considered including:

- **Bottom up**: identify all the small tasks that need to be done and then group them into larger, more manageable blocks of work. This approach is useful when delivery is well known, understood, and documented.
- **Working backwards**: Using a set delivery date and then filling in the blocks of work and supporting tasks to enable delivery. This approach is useful if you have a set deadline to achieve and helps highlight where additional costs and resources may be needed to ensure delivery.

Typically, you should apply best practice project management skills in the planning of any activity. Relevant skills such as PRINCE or APM training would support ensuring that the plan is robust. The use of appropriate planning software should also be considered for large projects or programmes of work, if available.

Points to be aware of in the planning of any programme:

- **Dependencies** – what are the dependencies associated with tasks? Which can be undertaken in parallel, and which must be undertaken in succession?
- **Risks** – what risks and barriers might arise within each task or between tasks which may need to be managed and mitigated?
- **Sign off** – don't forget to plan in time for all the appropriate people to sign off decisions. Finding out who will sign off what might be one of your early tasks.

Any of the planning approaches could be applied to either a programme level decarbonisation strategy delivery plan or a smaller project delivery plan, or you might use a combination of the two, for example when you are looking at a delivery strategy for multiple projects.

Some of the key points here are also covered in the Theme 4 - Funding guide.

2. Developing a plan to deliver your decarbonisation programme

Typically, a decarbonisation strategy is likely to be developed based on an evidence base, generated through completing the key tasks covered in the Theme 1 guide. You will then need the other elements of your programme and a plan to deliver.

In addition to strategy production, review and approval, there will be a need to include further time and resources for iterative reviews and updates, usually over an extended period (i.e. several years). This could include:

- Changes in overall ambition or target dates for emissions reductions.
- Capturing progress to date.
- Updating projected costs, activities and expected timescales on the back of any feasibility and design studies / lessons learnt reviews / known technology development / emerging risks.

Theme 1 actions for strategy development:

- Understanding how decarbonisation fits with your organisation's broader strategy.
- Identifying your key stakeholders and engaging effectively.
- Building a robust governance structure.
- Defining your emissions through understanding the scope and boundaries.
- Collecting relevant information and data.
- Calculating the baseline and model forward as "business as usual".
- Setting targets and outcomes with an understanding of the interventions and their indicative costs as well as how you will report on progress.
- Identifying and investigating your priority interventions and developing an action plan.

- Understanding and setting indicative project timelines.
- Planning resource and the associated capabilities.

Interdependencies

Between these 10 actions there are likely to be dependencies. For example, it would be hard to have a complete baseline without knowing the boundaries of your organisation and having some data available.

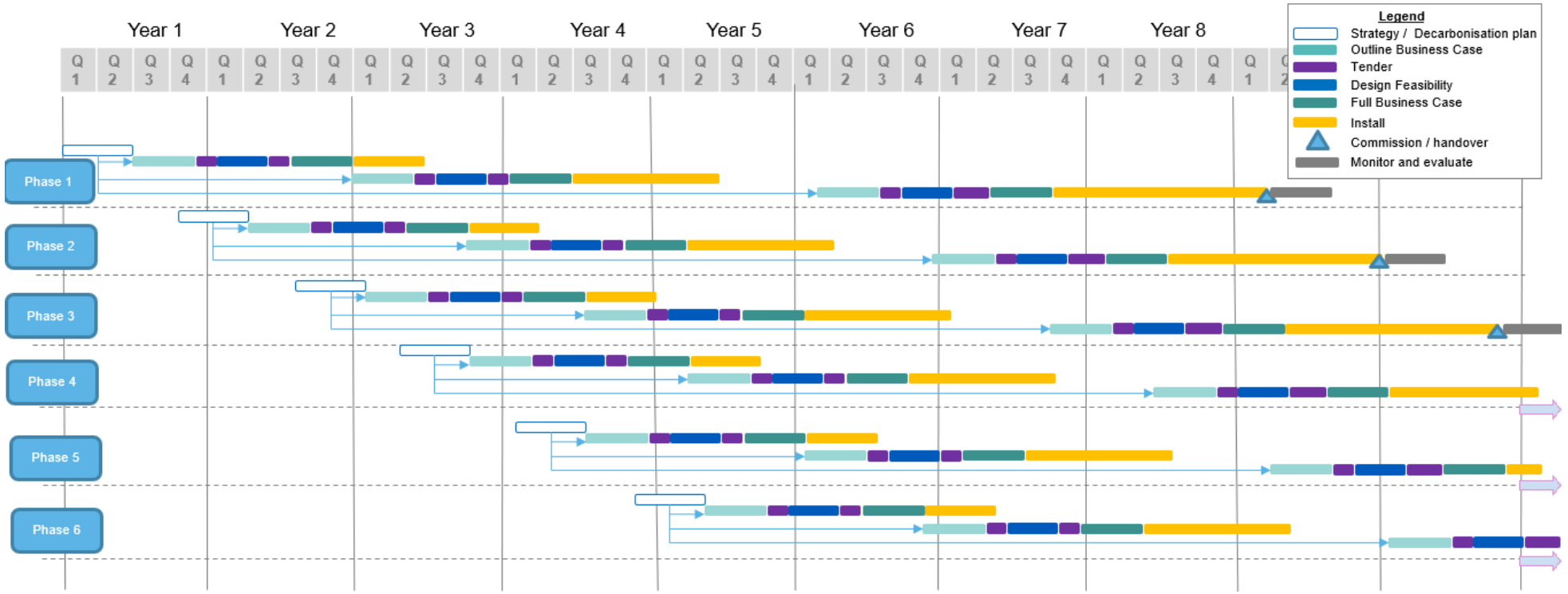
A project plan for the development of your programme or strategy should reflect these aspects. Developing a plan from beginning to end for a large site should take no longer than a year, though there may be areas which will be revisited later and more detail added.

The example on the page below gives you an idea of what a programme level plan could look like, considering multiple sets of projects across multiple sites occurring at the same time.

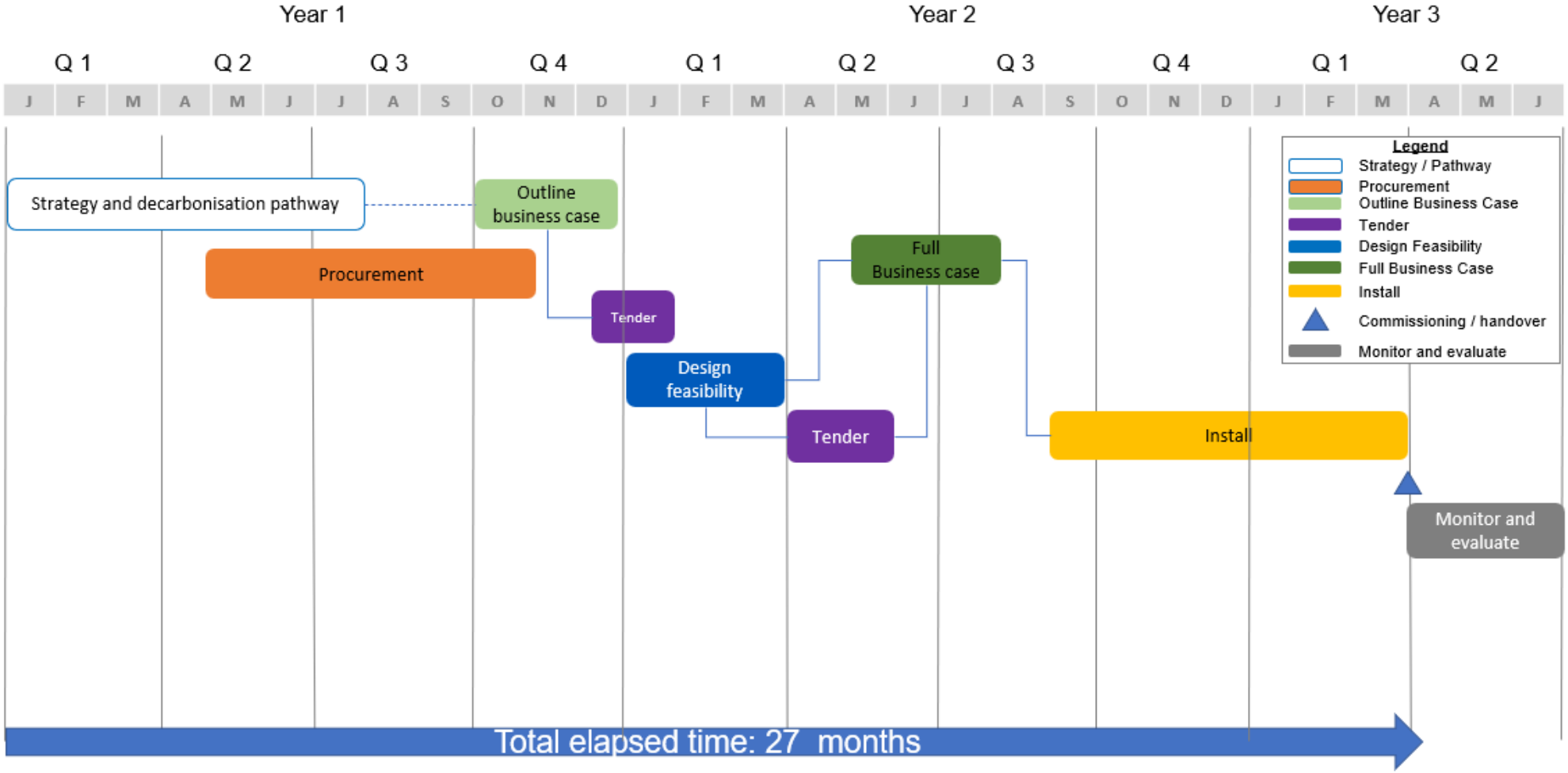
It was designed to give a plan on a page view of an estate level decarbonisation programme – showing in broad terms each activity and its duration, broken down into key elements of delivery within a change lifecycle for all the projects that needed to be deployed.

The aim is to give a good visual summary for senior stakeholders of the size of the programme and the limited time available to be able to deliver the whole programme. In this instance, phases of projects were introduced to manage funding, capacity to deliver and resources to oversee, whilst continuing business as usual operations.

Programme level plan, considering multiple sets of projects across multiple sites occurring at the same time:



Below is an example of how a medium-level plan for a site could look, broken down into key elements of identified activity, including any linkages where appropriate:



Managing risk

There will be risks at all stages of your decarbonisation programme development. It is important to capture risks and plan mitigations effectively. We learnt about key risk as part of the Modern Energy Partners Programme. The table below contains the top things to watch out for when developing your strategy and moving towards implementation.

We have developed a risk register template that you might want to consider using to help you capture and manage your risks. Further common delivery risks from the Modern Energy Partners Programme are also set out at the end of this document .

Risk	Possible mitigation
Lack of senior level engagement or endorsement when seeking to gain commitment to develop a strategy, or get it signed off	Build in specific activities and consider lead times to enable decision making – either person to person or via established organisational governance processes, building trust will be critical. Be aware that changes in personnel may mean that activities must be repeated.
Lack of resource to develop your plan	Consider activities and timescales required for identification, recruitment, onboarding and upskilling of resource, make sure you are clear about the risks of being under resourced.
Lack of data availability	Make decisions whether to use estimated data where data is not available, allow time to generate these estimates and sense check them.
Lack of commitment to take forward the strategy and its actions centrally and/or at a senior stakeholder level	Make time for regular senior stakeholder updates and progress reports throughout strategy development, with support for activities confirmed at the earliest stage possible. Often the sticking point is how the strategy delivery will be paid for. Building this into the strategy itself, i.e.

	identifying where funds might or should come from, could be helpful. It might delay your strategy, but ultimately make it easier to deliver.
Lack of commitment to take forward the strategy and its actions from internal support functions e.g. Finance / Procurement	Make time for early engagement with confirmed senior stakeholders from these functions including confirming working level points of contact within each area. Regular updates during strategy development seeking early indication of support can also be helpful.

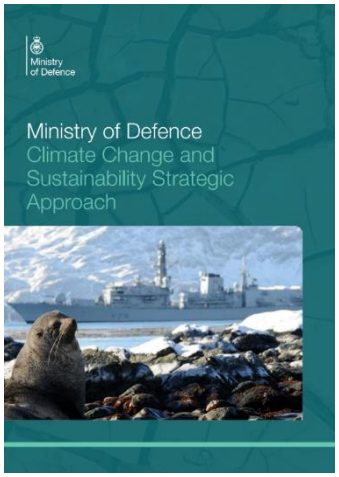
3. Delivering against your plan

Your plan should reflect all the tasks and activities that are expected to be undertaken.

Your plan should cover the period from when your activity starts until Net Zero is met. It's likely to reflect near time knowledge by having more detail in the early years and less detail in the future where there are unknowns in technology and delivery.

It should reflect:

- The targets set and any interim targets or goals.
- How they are going to be measured and met.
- When the actions are going to be delivered to meet the goals.
- How you will report your outcomes, including GHG emissions.
- How you will communicate your strategy, progress and successes.
- Agreed scope of activity across your estate, site(s), portfolio or building(s).
- Funding sources/financial commitment (at least for the early years).
- Who has approved the strategy and will be monitoring progress.



A good example of a high-level plan is set out by the MOD and in particular their approaches to EPOCH's where the strategy provides most commitment and detail in the first EPOCH, leaving the rest to continue to evolve.

Dependencies

A strategy needs an understanding of where funding is going to come from to be approved or committed to. This is probably one of your key dependencies.

Possible funding sources could include organisational annual budgets (with any building maintenance budget being a good starting point) or external sources. In each case the planning and application process, content required and timelines that support submission, including time frames for decision / approval will need to be understood and included in your plan. More detail on these topics can be found in the Theme 4 Funding Guide and the Theme 4 Business Case Checklist.

If funding is confirmed, it is essential that the projects that it will support are ready to be implemented within the allowed funding period. This may include planning, design and feasibility studies in earlier months/years, moving on to installation and monitoring in later months/years.

Irrelevant of where the funding is found, the implementation of any projects and preceding studies are likely to require internal business case approval which will need drafting and agreement through the relevant processes.

You will also need to consider if there are any practical or operational dependencies. Will new low carbon technologies be operational in time to replace end of life assets? Do works need to be timed for certain times of the year? Do plans need to be made to move activities from one building to another temporarily while work is completed? Close engagement with those affected by any projects will be critical in planning these in. Our Stakeholder Engagement and Communications Guide may help you think about all your key stakeholders.

Finally, where support is required externally for studies or project delivery, you will need to understand the procurement route you are planning to use, and work with the procurement team to run the procurement process. This must also be factored into your timeline. For more information see the Theme 3 Procurement resources.

Project Risks

When undertaking a decarbonisation project, it is crucial to identify, assess, and manage the associated risks. These risks have the potential to have a significant impact on the success of your decarbonisation strategy. It is important to allocate time at the beginning of the project to collectively consider potential risks and document them.

Throughout the project's lifecycle, different risks will arise, and they must be actively tracked and managed. While the level of uncertainty and risk may decrease as the project progresses, there will always be some level of risk until the project is fully delivered, commissioned, handed over and is performing as expected, delivering the benefits you sought to achieve.

Consider giving the following more scrutiny when first identifying and subsequently reviewing your risks:

- Any changes to key personnel which could cause delays, loss of knowledge or changes of direction.
- Tasks applicable to key stages of the project or those that are part of the critical path.
- Tasks that have a long duration, span over multiple financial years, or activities that involve multiple teams to deliver.
- Any task that is critical to benefits being delivered.
- Any point at which a task or deliverable is being done for the first time.
- Activity involving new or unfamiliar technology.
- If a delivery team have not worked in your department’s working environment previously (a lack of knowledge or experience may result in risks not being captured which will then result in additional issues that need to be managed).

To help organisations in the public sector navigate these risks, the Energy Systems Catapult has compiled a repository of example risks based on their experiences in the Modern Energy Partners programme. These real examples should be helpful to you as you consider your projects and are included in the Appendix.

It is worth noting that deep decarbonisation projects come with their own unique set of risks, beyond those of a ‘normal’ construction project such as the potential failure to achieve sufficiently low emissions levels.

This guide mainly looks at the decarbonisation specific risks, and it only covers other risks which may arise from the construction aspects of the project at a high level.

Please note that there may be specific, additional risks that your organisation mandates you to include and consider when undertaking these types of projects. It is also a good idea to find out if any similar projects have been completed within your organisation and, if so, determine whether there are there any lessons learnt that can be used to further identify and mitigate potential risks.

Overall, a comprehensive risk management approach is essential for the successful implementation of decarbonisation projects and the mitigation of potential risks.

Managing 'change'

It is likely that you will need to manage ‘change’ whether it be on a project on a single site or on multiple sites over several years. 'Change' means a significant change to your plan, such that you will need to adapt your approach in some way. ‘Change control’ is a common term in project management.

You should capture how you deal with change in your plan early on and ensure the appropriate governance mechanisms are in place. This should include defining what is meant by ‘significant change’ within your programme and therefore what needs to happen when it inevitably arises.

Consider the following for any change that arises:

- **Impact on team**: Change normally impacts internal and external people resources required – usually either more resource required or more time required to deliver with the same team.
- **Impact on costs**: what is the impact of the change on costs and what needs to happen within your governance and reporting framework including management of resource availability and cost tracking.
- **Impact on resources**: changes or surprises in relation to lead times for equipment/technology orders, or specific less common or innovative technologies. For example, economies of scale might be achieved e.g., 5,000 LED fittings instead of 500, or a longer than expected lead time for a bespoke heat pump solution.
- **Impact on governance**: you will need to consider your status

reporting and risk / issue management at either portfolio, channel, or site level and what needs to be updated/communicated.

- **Impact on site / estate**: Are there 'real world' impacts of the change? What needs to happen in relation to communications planning – internal and external?
- **Impact on strategy**: Review your strategy and objectives versus original outputs and realign if needed.

4. Delivering a decarbonisation project – top tips

As already touched on within the previous sections, there are likely to be several elements of which a project's delivery is composed. The overarching activities that should be included in your plan have been captured here as a reference point to assist in delivery planning and are also available in the supporting template that accompanies this guide.

The table below includes activity (in an estimated sequence) and shows where supporting guidance can be found:

Task	Theme guide
The drafting of an internal business case to get the project to go ahead	Theme 4 - Funding 
Seeking approval of any business case	Theme 4 – Funding 
The securing of (internal or external) funding for any feasibility and design studies to go ahead in advance	Theme 4 – Funding 
The securing of (internal or external) funding for the project in principle	Theme 4 – Funding 
The consideration of procurement routes	Theme 3 – Procurement 
The running of the procurement process for any feasibility and design studies	Theme 3 – Procurement 

The delivery of any studies	Theme 2 – feasibility and design 
The review of any studies and sign off for the final proposed solution	Theme 2 – feasibility and design 
The drafting and implementation of a monitoring and evaluation strategy	Theme 7 – monitoring and evaluation 
Seeking approval for the project delivery	Theme 4 – Funding 
Drafting of tender documentation	Theme 3 – Procurement 
Any procurement for the installation of the project	Theme 3 – Procurement 
Contract signing	Theme 3 – Procurement 
Kick off and preliminaries	Theme 5 - Installation 
Installation	Theme 5 - Installation 
Commissioning and handover	Theme 6 – Commissioning and handover 
Monitoring and evaluation	Theme 7 – monitoring and evaluation 

Planning top tips

Drafting and seeking approval of business cases to allow project delivery

Whenever any agreement is sought to take forward activity, whether it is funded by the organisation or not, approval through some sort of business case is likely. Every organisation has a different way of developing a case however the Green Book lays out what typically should be included.

See our checklist on drafting a business case.

Approvals are likely to take time, whilst those that are responsible for reviewing and approving consider the case. Mapping out who is required to approve any funding requests including their roles and responsibilities, and understanding typical timelines for approvals need to be added into the plan.

If the project is deemed to be unusual, or the first of its kind for your organisation, consider extending the review and approval period to ensure you can get stakeholder buy-in without causing delays to your plan.

External funding

Should external funding be considered to either entirely fund or partially fund proposed delivery, the deadline for submission, review and approval relating to the funding process should be captured in the plan.

Please see our funding sources table for currently available funds.

Procurement

Understanding the procurement and contracting route needs to be part of any business case. It's also important to understand the timeline for procurement, including activities such as developing documents, advertising and tender evaluation, final approval and of course contracting. The Sourcing Playbook and Construction Playbook set out government guidance for procurement of public goods/services.

Engage with and work with procurement at your earliest opportunity to understand what time allocations should be incorporated into the programme. See Theme 3 procurement guidance for more details on the type of activity and approach.

Development of feasibility and design studies

In addition, time should be allowed for the activity in question such as desktop analysis, feasibility studies or detailed design - see the Theme 2 guidance for all the different types of activities.

Project work should have an agreed timeline with deliverables confirmed that are submitted for review against agreed dates. Time to review documents (by internal stakeholders) should be included.

The practicalities of installing on operational sites

Activities that require visiting or accessing site, such as undertaking feasibility or design studies or installing measures will need engagement and agreement with site stakeholders. You could consider setting up a project working group made up of relevant site stakeholders, your team and the project or study delivery team.

Site level details that may affect how the delivery will be achieved or the duration of the proposed activity (for example working hours, or security required) should be identified as soon as possible in the planning process.

Activities you might want to think about and/or discuss with site representatives include:

- Identifying the 'right' individuals at site level.
- Any additional security clearances for those going to site, enabling access to all the pertinent data and information and required areas of the site. There might also be additional costs if escorts are required for any parts of the site.
- If the work will require power outages and how that will be managed.
- When work is best to take place: during working hours / out of normal business hours / weekends etc.
- Adherence to any technical standards / site specific requirements for decarbonisation installation.

Commissioning and handover

This task is unlikely to take long, however it must be completed at the end of the installation. This could be a single event or occur multiple times during a site's overall decarbonisation journey and is a key transition from the project to business-as-usual operation. Snagging (a list of jobs or activity that needs to be completed before installation can be classed as complete) and completion certificates need to be finished before handover starts so that equipment is fully operational. Planning to ensure that the correct stakeholders are available and in attendance is important, along with identifying and agreeing what is required to accurately define completion and handover, prior to installation commencing.

Making time for reviews, continuous improvement and learning

Throughout the process/timeline, review points should be included to capture lessons learnt, and think about how activities could be streamlined next time around.

Monitoring and evaluation

Monitoring and evaluation should be considered early in the project with a strategy developed. The strategy must reflect how and who is going to install any monitoring equipment, and once a project is complete, identify who is going to carry out the monitoring, what the information is going to be used for, and what success and benefits look like. See the Theme 7 guide – Monitoring and evaluation for more details on the approach.

Risks to consider include:

- Advanced planning not being completed or seen through.
- No-one procured to support the delivery of metering equipment.
- No-one being responsible for the ongoing monitoring and reporting of revised energy use.
- Previous energy use not being recorded to demonstrate how the project has impacted your baseline usage or BAU scenario.
- Poor communication and confirmation of decarbonisation achievements.
- Failure to show projected success / benefits during the monitoring stage.

Appendix

Financial risks

The table below contains some of the common financial risks encountered during the MEP programme.

Risk title	PSDG Theme affected by risk							Risk Description	Risk Impact	Risk Mitigation
	1	2	3	4	5	6	7			
Electricity network reinforcement cost estimation underestimated	x	x	x	x	x			There is a risk that the full costs required for electricity network reinforcement, to support electrification of heat on sites which currently use gas, are either underestimated or not included in projected required costs and outcomes.	Cost estimates could be inaccurate and not include major, key works required on infrastructure to support electrification of heat. Unexpected additional gap in delivery activity whilst network upgrade completed.	Refer to Local DNO capacity guidance Early engagement with operator required to establish estimated costs. Time, cost and duration activity to be built into plans, forecast and business case metrics as appropriate.
Energy intervention payback over	x	x		x				There is a risk that some energy decarbonisation intervention measures result in extended payback years which may not	Unable to proceed with proposed intervention.	Review with site and department representatives as part of feasibility and design stage of lifecycle.

Risk title	PSDG Theme affected by risk							Risk Description	Risk Impact	Risk Mitigation
	1	2	3	4	5	6	7			
and above department Business case tolerances								be acceptable to Govt funding / internal department governance terms of reference which would prevent the project proceeding under proposed terms.		If acceptable, gain acceptance from funding bodies, department governance and accountable stakeholders before business case funding requests are produced.
Cost Escalation between Outline and Full Business case submission		x		x				There is a risk that costs escalate unexpectedly between the OBC and FBC.	Less scope can be delivered, or the interventions are not funded.	Learn the reasons for the estimation differences from the outline Business case (OBC), confirming the validity of the full business case (FBC) costs and provide the necessary rationale, including impacted expected benefits and Carbon reductions if necessary. Capture the information as lessons learnt for future OBC submissions for the same / similar energy interventions.

Risk title	PSDG Theme affected by risk							Risk Description	Risk Impact	Risk Mitigation
	1	2	3	4	5	6	7			
Costs risk captured for delivery				x				There is a risk that additional costs may be incurred over and above the agreed budget for delivery of planned intervention activity on site - a Cost risk / contingency requirement has been requested by parties responsible for installing interventions.	Additional funding may be required to deliver.	Approach to manage cost risk / contingency to be agreed by all parties and to be included and reflected in funding request and supporting governance process with the project (this could be in the form of a tolerance within the business case / funding identified and ringfenced to be drawn down only if all parties are in agreement). Recommend change request process set up and available to manage release of additional funds if necessary.
Annual budgets and planning	X	X		X	X	X		There is a risk that delivery of project activity spans multi-year budgetary spans, resulting in an inability to ring fence all required funds to deliver planned sustainability	Delays to approval of business case / funding request. Denial of multi-year funding request, resulting in an incomplete installation of	Consideration of funding approach with overarching strategy. Agreement, if possible, to ringfence allocated funds as

Risk title	PSDG Theme affected by risk							Risk Description	Risk Impact	Risk Mitigation
	1	2	3	4	5	6	7			
								interventions.	proposed intervention.	part of business case submission. Ongoing monitoring, management and reporting of financial spend over duration required.
Benefits realisation				x		x	x	There is a risk that planned energy efficiency installation does not deliver or fails to deliver the expected outputs and benefits on site post installation.	Installed technology fails to deliver expected benefits as per full business case metrics.	Cost and expected benefits as a result of installation activity to be positioned and approved by accountable stakeholders as part of business case approval. Commissioning and handover activities to include specified and agreed warranty periods. Ongoing monitoring, accountability and reporting of management information to support expected benefits realisation to be built into

Risk title	PSDG Theme affected by risk							Risk Description	Risk Impact	Risk Mitigation
	1	2	3	4	5	6	7			
										(including costs for resource where necessary) ongoing BAU activity / FM contracts as necessary.
BMS installation at site does not deliver expected functionality or carbon reduction benefits proposed at Business case stage		X		X	X		X	There is a risk that the BMS solution is not delivered or fails to deliver the expected outputs at site after the project comes to an end.	Non delivery of BMS solution by end of project. Delayed delivery of BMS solution at site post end of project [no formal budget exists beyond this point]. Installed BMS solution at site fails to deliver expected benefits as per full business case metrics.	Cost and installation activity to be agreed prior to project closure. Ongoing monitoring, accountability and responsibility to be held within site FM and sustainability team.
Energy tariff changes impact efficiency and expected benefits	X	X					X	There is a risk that tariff and energy costs change / are re-negotiated during the lifecycle of the project that affect the planned cost efficiency of	Impacts to ongoing energy costs. Increase / decrease in costs and benefits based	Define and understand current energy tariff agreements that are in place within the department including renewal dates. Ongoing monitoring of wider

Risk title	PSDG Theme affected by risk							Risk Description	Risk Impact	Risk Mitigation
	1	2	3	4	5	6	7			
								planned interventions.	on energy usage. Proposed intervention no longer most viable / cost effective solution.	energy markets, including department approach to energy contracts.
Existing energy performance / Commercial contract implications	x	x	x	x	x			There is a risk that contracts may impact the commercial element of delivery and result in either less than optimal returns or stranded assets as part of the overall contract criteria.	There may be a change to pricing structures as a result of commercial contract obligations which 'price out' the preferred intervention or may also result in stranded assets at the site in the future.	Confirm with site Terms and conditions of EPC / Commercial contracts and ensure all parties are aware of any implications discovered as part of strategic definition.

Time related risks

Time-related risks in a project pertain to potential threats or uncertainties, whether anticipated or not, that could affect the project's ability to complete tasks and milestones on schedule. Such risks can result in delays, missed deadlines, and additional costs, potentially necessitating adjustments to the project scope. These impacts can arise at any stage of the project, affecting the project team, stakeholders, and overall project success. Examples from the MEP programme including the following:

Risk title	PSDG Theme affected by risk							Risk Description	Risk Impact	Risk Mitigation
	1	2	3	4	5	6	7			
Site / department internal review and approval process	x			x				There is a risk that Statement of notification (SON) and other review and approvals processes (e.g. business case approval) are not planned for / take longer than expected before on site activity can commence.	Inability to complete all planned works within planned timescales.	Early engagement with decision makers / approvals committees to position requests and understand expected timelines for review and approval, building into plan as necessary. If possible senior stakeholder point of contact established to help liaise and resolve any potential issues.
IT security and outage requests		x			x			There is a risk that IT security considerations on site may require additional governance and approval to agree systems	Installation activity delayed / requires re-planning in line with power outage	Work with onsite team when planning installation activity to determine what type of power outage is required, and what

Risk title	PSDG Theme affected by risk							Risk Description	Risk Impact	Risk Mitigation
	1	2	3	4	5	6	7			
								outages (where power shutdown is required to support installation) which will impact planned installation activity.	processes.	approvals [including the process and the timescales to obtain approval] are required to facilitate.
Secure environment constraints		x		x	x			There is a risk that working in a secure environment may impact the capability to deliver activities to planned timescales.	Planned activity may take longer than envisaged to deliver. Unexpected / un-planned on-site activity may not allow access onto site to install (e.g. MoJ lockdown event / Dignitary visit to site).	Close engagement with on-site team to identify any working processes / site requirements that may impact planned activity. Reflect and reduction in operating hours / availability / additional resourcing implications (e.g. escorts) into funding requests. Monitor and report any impacts or delays experienced reported centrally with relevant rationale.
Site team engagement		x		x	x			There is a risk that engaging with and availability of key site staff may be problematic due	Delay to activity.	Consideration taken into account based on amount of expected time and effort

Risk title	PSDG Theme affected by risk							Risk Description	Risk Impact	Risk Mitigation
	1	2	3	4	5	6	7			
								to BAU activity and operational impacts - resulting in delays throughout the project's lifecycle.		required from key onsite personal to be positioned and agreed up front with accountable senior stakeholders. Where relevant and if possible, ringfenced resource / timing allocation to be provided for identified site personal. Throughout the project lifecycle, continuous engagement with the site and support to help them to deliver the work.
Business Case approval process delays start of installation activity affecting in year agreed		x		x				There is a risk that delays to full business case production and approval could impact on delivery dates.	Inability to complete all planned works within current financial year.	Work with site and department representatives and ensure process including review and approvals of key documentation is included in planning stages. Early engagement with decision makers / approvals committees

Risk title	PSDG Theme affected by risk							Risk Description	Risk Impact	Risk Mitigation
	1	2	3	4	5	6	7			
budgetary commitments										to position funding request and expected timelines for submission. If possible, agree process for split year delivery including budgetary and other financial considerations.
Availability of sufficient quantities of proposed technology				X	X			There is a risk that there may be delays, or a shortage of specified technology or components that may significantly impact deliverability of the project.	Delays to completion of project / Inability to provide required number of units / Cost increases force a market shortage.	Early engagement with supplying contractors to understand the landscape now, what it will look like when the technology is required, and sufficient time allocated to the project timeline. Option to ringfence additional contingency costs if deemed necessary to be drawn against subject to adequate proof of need.

Health and safety risks

Health and safety risk management is essential for all activities on site. Any contractor overseeing work on site will have their own Health and Safety management plan, including production of Risk Assessment Method Statements (RAMS) which should be managed in accordance with on-site representatives responsible for Health and Safety provision. Additional guidance can be found via the health and safety executive, royal institute for chartered surveyors or within RIBA including:

- Appointing a competent person
- Developing a Health and safety policy
- Testing and competency
- Risk assessment
- Reporting accidents and illness

Example risks are provided below:

Risk title	PSDG Theme affected by risk							Risk Description	Risk Impact	Risk Mitigation
	1	2	3	4	5	6	7			
On site injury		x			x			There is a risk that colleagues visiting and working on site could suffer injury or illness as a result of time spent on location.	Impact could range from loss of life, financial issues and delays to project.	Establishment of H&S workstream to ensure protocols, procedures and reporting are established at the outset of the project.

Risk title	PSDG Theme affected by risk							Risk Description	Risk Impact	Risk Mitigation
	1	2	3	4	5	6	7			
										All contractors and suppliers to receive site inductions and complete risk assessment of sites, provide method statements for installations etc.
Asbestos / hazardous materials present at site		x			x			There is a risk that buildings may contain a hazardous material which requires additional processes to be adopted when surveying / installing activity is planned.	Increased timescales to conduct work. Additional costs to work with, remove and dispose of material.	Understand whether hazardous materials are present on site. Validate location of materials (usually a register will exist if relevant). Ensure activity built into plans and costed accordingly.
Working with electricity		x			x		x	There is a risk that IT significant power outages are required to support installation which will impact planned installation activity and require temporary alternate power provision.	Installation activity delayed / requires re-planning in line with power outage processes. Additional cost implications for temporary power provision (including lead	Work with onsite team when planning installation activity to determine what type of power outage is required, and what approvals (including the process and the timescales to obtain approval) are required to

Risk title	PSDG Theme affected by risk							Risk Description	Risk Impact	Risk Mitigation
	1	2	3	4	5	6	7			
									time considerations).	facilitate. Validate acceptable power requirements and tolerances based on time of year, expected duration and average Vs historical highest demand requirements.
Maintenance and training		X			X	X	X	There is a risk that the ongoing operation and maintenance of new technologies is not considered in project plans or post project business as usual activity.	New interventions not working properly / optimally. Degradation of sustainable outputs of technology over time, reducing benefits and impacting overall decarbonisation strategy targets.	Proper maintenance and regular inspections are necessary to ensure the safe operation of sustainable technologies. Adequate training should be provided to building staff to understand the risks associated with these technologies and how to address them effectively, including respective time, costs and roles / responsibilities.

Scope risks

During a project, various risks may arise due to unexpected findings at the project site that differ from initial proposals, challenges in the supply chain, or delays necessitating adjustments to the project plan. Although the exact outcomes are hard to predict, some planning can be done to address potential options.

It's crucial to be cautious about 'scope creep' and ensure that any identified risks are linked back to the agreed-upon project scope. If additional scope elements are discovered or encountered, the project team should inform relevant stakeholders about the impact and follow a change request process to review and agree on any necessary changes to the project scope.

Some common examples from the MEP programme include:

Risk title	PSDG Theme affected by risk							Risk Description	Risk Impact	Risk Mitigation
	1	2	3	4	5	6	7			
Temporary heating / power solutions cannot deliver on site requirements		x		x	x			Where delays occur during installation activity which extend temporary heat / power requirements over and above the capacity of the temporary solution (e.g. a temporary heating solution in place on site cannot cope with the heating demand on site during the winter heating season).	Insufficient heating / power available on site including hot water provision mean that part of site becomes unable to operate. Additional heating / power solution required at site, resulting in further delays to overall programme whilst	Consideration of seasonal / on-site factors that may impact power / heating solution to be taken into account when planning any temporary solution. Tolerances to be built into requirements to ensure adequate coverage

Risk title	PSDG Theme affected by risk							Risk Description	Risk Impact	Risk Mitigation
	1	2	3	4	5	6	7			
									installed.	available.
Contractual limitations to decarbonisation aspirations				x	x			There is a risk that energy delivery agreements (e.g., an energy performance contract) are in place which affects proposed decarbonisation activity.	There may be a change to pricing structures as a result of EPC requirements for delivery. Unable to proceed with proposed intervention due to contractual obligations. May also result in stranded assets at site in the future.	Review with site and department representatives as part of Feasibility and design stage of lifecycle. If applicable confirm terms and conditions of any agreements that are in place and understand any potential impacts that need to be addressed. Once confirmed obtain written confirmation that intervention can proceed.
BMS installation requires scope rethink based on IT security concerns on		X		X	X	X		There is a risk that an IT security stance may significantly impact the ability to use proposed IT infrastructure solution on site.	Rethink of fulfilment of requirement required which may impact, scope, costs and time to deliver.	Ensure formal cost proposals, design and installation timescales are built into planned activity.

Risk title	PSDG Theme affected by risk							Risk Description	Risk Impact	Risk Mitigation
	1	2	3	4	5	6	7			
platform and host systems										

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